

Applicant : James R. Cole et al.
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Alt. Ref.: 00116-001100000

REMARKS

The Examiner objected to the drawings under 37 CFR 1.83(a) as the drawings did not show every feature of invention specified in the claims. Specifically, the Examiner indicated that the drawings as filed did not illustrate "the computer system integrated into the digital projector including a central processing unit, random access memory, mass storage and access to an external network." To address this informality, Applicant has added FIG. 4 consistent with claim 28 as filed and further described in paragraph 0027 on page 7 as filed. Consequently, no new matter has been added. FIG. 1, FIG. 2, and FIG. 3 were also modified to indicate that a total of '4' rather than '3' sheets are now included and have also been included as replacement sheets.

In addition, the Examiner rejected claims 1, 2, 5-12, 14-19, 23-27, and 29-32 under 35 USC 103a over Takizawa et al (US Patent 6,702,444). Applicant respectfully submits that Takizawa alone does not teach or suggest any aspect of the present invention. Takizawa describes a way of lowering fan noise and keeping a light source or lamp from overheating and possibly becoming damaged (Abstract). Once a light source is turned on, the heat produced by the light source is monitored with temperature sensors and the fan speeds are set to different speeds depending on the heat output. (Col. 9, lines 45-67). Takizawa is concerned with turning off the lamp when the heat output is too great but is not concerned with temperatures when the lamp is turned on or off during normal usage. (Col. 9, lines 57-62).

Claim 1 recites "receiving a request to turn on the digital projector" however this is not equivalent to powering the projector on as indicated in Takizawa lines 18-22, col. 13. For example, Takizawa does not receive a request and then later determine whether to turn on a light source or other components in the projector. Instead, Takizawa merely turns on the device in its

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entirely upon being powered on (Col. 13, lines 18-22). It is apparent from reading Takizawa that the 'device' in Takizawa encompasses the complete projection display device and does not exclude the light source or other elements (Col. 3, lines 65-68). Consequently, requesting to turn on the digital projector as recited in Claim 1 is not taught or suggested by Takizawa.

Even if Takizawa did receive a turn-on request, it is likely that Takizawa would be "receiving temperature data associated with a light source from a temperature sensor" as recited in claim 1. According to Takizawa, the device enters a standby period immediately after being powered on during which the fans operate regardless of the temperature detected by the temperature sensors (Col. 9, lines 57-62). There is no reason for Takizawa to receive any temperature data when the device is initially turned on as the device clearly does not use this temperature information. Similarly, there is also no reason in Takizawa for "comparing the temperature data to a predetermined threshold" as recited in claim 1 as Takizawa operates the fans for a standby period subsequent to turning on the device and does so without comparison to the temperatures associated with any temperature sensors. (Col. 9, lines 57-62).

Shortly after turning on the device, there is also no operation in Takizawa "for turning on a cooling device if the temperature data is above the predetermined threshold and if a turn-on request has been received" also recited in claim 1. The Examiner has indicated that Takizawa does this operation yet has provided no basis for this assertion. In particular, Takizawa teaches away from conditionally turning on the cooling devices based on temperatures. Takizawa turns on the cooling fans immediately after turning on the device and without consideration of any temperature measurements from one or more temperature sensors (Col. 9, lines 57-62). Clearly, the fans in Takizawa are turned on unconditionally when the device is turned on and not in the manner recited in claim 1.

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Indeed, Takizawa only uses temperature data after the standby period and only to determine when to turn off or extinguish a light source (Col. 13, lines 45-49) and not when to turn on the light source. Clearly, turning off or extinguishing a light source under the conditions in Takizawa is the opposite of "turning on the light source if the temperature data is at or below the predetermined threshold and if a turn-on request has been received" as recited in claim 1. Instead, Takizawa assumes the light source can be safely turned on during the standby period regardless of temperature and only later turns off the light source if it becomes too hot. Clearly, Takizawa does not teach, suggest or even consider that the light source could be damaged or harmed if the temperature from the projector is too high during the standby period. For example, turning a projector off, unplugging it from a wall and then turning it back on would cause the projector in Takizawa to turn the light source on immediately even when the projector is quite hot. This is because Takizawa turns on the device, the light source and enters standby mode immediately after being turned on. In contrast, claim 1 recites "turning on the light source if the temperature data is at or below the predetermined threshold and if a turn-on request has been received."

For at least the reasons described above, independent claims 17, 29 and 31 also remain patentable over Takizawa alone or in combination with the cited references. Even though they are independently patentable, claims 7-8, claims 18-28 also remain patentable by virtue of their dependency on their respective allowable independent claims.

The Examiner also rejected claims 9-12 and 16 in light of Takizawa. As amended, claim 9 recites "turning off a cooling device in response to the request and within a substantially immediate time frame and without consideration of the light-source temperature." Amended

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claim 9 incorporates limitations previously in claim 10, now canceled. As the Examiner has already made clear, Takizawa does not even address what occurs when a user requests turning off the device but instead only deals with an automatic shutdown due to overheating (Office Action, pg. 5, paragraph 2). To reach these conclusions, the Applicant's respectfully submit that the Examiner is making assumptions and using hindsight to compare the overheating condition and automatic shutdown with a request to shutdown a projector as recited in claim 9. By the Examiner's own statements, the light-source temperature is a pre-condition for activating the automated shutdown (Office Action, pg. 5, paragraph 2). This fact is a significant limitation to Takizawa and therefore cannot be overlooked in this analysis.

Even if automatic shutdown in Takizawa could be considered, it is doubtful that a user would purposely overheat the device according to Takizawa to shutdown the device. First, this would be a really difficult way to shutdown the device and second, it would potentially cause damage to the device after repeated use. Moreover, the Examiner cannot both indicate that Takizawa turns off the device based on temperature (i.e., overheating) and simultaneously indicate that Takizawa shuts down without regard to the temperature measurement. These two interpretations of Takizawa are at odds with each other.

Applicant respectfully submits that Takizawa needs to be taken in context of an overheating situation as it is described (Col. 10, 32-65 and Col. 11, lines 1-41) and not out of context. Clearly, Takizawa only describes a shutdown operation based upon temperatures received and an overheating condition (Col. 11, lines 24-41). Takizawa specifies that the main power supply remains turned on a predetermined period so as to rotate the various fans and lower the temperature of the device only after detecting an overheating condition by use of the temperature sensors (Col. 11, lines 24-41). Accordingly, this does not teach or suggest "turning

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off a cooling device in response to the request and within a substantially immediate time frame without consideration of the light-source temperature." as recited in amended claim 9.

Independent claims 17, 30 and 32 are also in condition for allowance for at least the same reasons as claim 9. Further, while independently allowable, claim 10-16 and 18-28 are also in condition for allowance by virtue of their dependence on their respective allowable independent claims.

Claims 3, 4, 13, and 20 were also rejected by the Examiner under 35 USC 103a also in view of Takizawa as applied to claims 1, 2, 5-12, 14-19, 23-27, and 29-32 and further in view of Arimoto. As previously mentioned, Takizawa describes a way of lowering fan noise and keeping a light source or lamp from overheating and possibly becoming damaged (Abstract). Once a light source is turned on, the heat produced by the light source is monitored with temperature sensors and the fan speeds are set to different speeds depending on the heat output. (Col. 9, lines 45-67). Takizawa is concerned with turning off the lamp when the heat output is too great but is not concerned with temperatures when the lamp is turned on or off during normal usage. (Col. 9, lines 57-62). As noted by the Examiner, Takizawa does not concern using mercury vapor lamps as recited in claim 3 or detecting when the temperature is below the boiling point of mercury as recited in claim 4. Applicant would also like to mention that Takizawa also does not concern using xenon lamps also recited in claim 3.

While Arimoto describes using mercury vapor lamps, the Examiner has provided no specific motivation for combining the teachings of Arimoto with Takizawa. This would be difficult since Arimoto is concerned primarily with heating the lamp to hotter temperatures to shorten the light output rise time (Abstract) and is not concerned with cooling the lamp as described in Takizawa. Heating the lamp to hotter temperatures according to Arimoto would not

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improve the light output rise time as Takizawa would sense the higher heat levels and perform an immediate shutdown.

Even if it were proper to combine Arimoto and Takizawa, the combination teaches away from "turning on the light source if the temperature data is at or below the predetermined threshold and if a turn-on request has been received" as recited in claim 1. Arimoto suggests actively heating the lamp to a higher temperature before striking the lamp (Abstract) and not reducing the temperature to below a threshold before it can be struck. In the case of Arimoto, increasing the temperature of the lamp may improve the light output rise time but tends to decrease the longevity of the lamp. By instead only "turning on the light source if the temperature data is at or below the predetermined threshold" as recited in claim 1, then the lamp tends to last longer.

Applicant respectfully submits that claims 3, 4, 13, and 20 remain patentable over the cited art for at least the reasons previously mentioned as well as their dependency on allowable independent claims. Further, the combination Arimoto and Takizawa teach away from cooling a lamp before striking as recited in claim 1 and provide additional reasons for allowance.

Claim 21 and 22 were rejected under 35 USC 103a over Takizawa as applied to claims 1, 2, 5-12, 14-19, 23-27, and 29-32 and in view of Goodwin (US Pat. 6,345,238). As previously mentioned, claims 21 and 22 are not only independently patentable but also remain patentably distinct based on their dependency on allowable independent claim 17.

Further, claim 28 was rejected as under 35 USC 103a over Takizawa as applied to claims 1, 2, 5-12, 14-19, 23-27, and 29-32 and further in view of Derryberry (US Pat. 6,626,543). Once again, claim 28 remains patentably distinct independently as well as based upon its dependency on allowable independent claim 17.

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Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made".

Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Leland Wiesner, Applicants' Attorney at (650) 853-1113 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,

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Date

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